

the main effects or group of effects anticipated as having an influence on the signal are dispersion, distortions, noise-like effects and polarization effects.

5 17. Method in accordance with one of the preceding claims, characterized in that  
several interconnected adaptive optical filters F are used.

10 18. Arrangement for the determination of signal degradations in an optical broadband signal (S), transmitted via a transmission system, from which at least a fraction (S1) in spectral and/or amplitude terms is tapped off by means of a coupler (KO) and fed to an adaptive optical filter (F),  
that connected downstream from the adaptive optical filter (F)  
15 are a measurement unit (ME) and a determination unit (EE) for determining one or more quality parameters,  
characterized in that  
that the adaptive optical filter (F) has a control unit (SE)  
which is of such a form that in a first operating state the  
20 through-switching of the optical signal (S) is effected and in a second operating state it is possible to set predefined pass characteristics for the adaptive optical filter (F), to  
exercise an influence on signal distortions in the optical  
signal (S).

25 19. Arrangement in accordance with Claim 18, characterized in that  
a bandpass filter (BPF0) is connected downstream from the  
coupler (KO).

30 20. Arrangement in accordance with Claim 19, characterized in that  
connected downstream from the bandpass filter (BPF0) is an  
amplifier (V1), with a further bandpass filter (BPF1)  
35 connected downstream from it.

21. Arrangement in accordance with Claim 20,  
characterized in that

an amplifier (V0) is connected between the coupler (K0) and  
5 the bandpass filter (BPF0).

22. Arrangement for measuring signal degradations for an  
optical broadband signal (S) transmitted over a transmission  
system, from which at least a fraction (S1) in amplitude terms  
10 is tapped off by means of a coupler (K0) and is fed to an  
adaptive optical filter (F),

characterized in that,

inserted into the circuit between the coupler (K0) and the  
adaptive optical filter (F) are a first circulator (C0), in  
15 addition a bandpass filter (BPF0), and then a second  
circulator (C1),

connected to the output of the adaptive optical filter (F)  
there is an optical signal feedback (FB) for the purpose of  
transmitting the filtered signal (S2) to the second circulator  
20 (C1),

the filtered signal (S2) is supplied to a signal quality  
measurement unit (ME) via the circulator (C1), the bandpass  
filter (BPF0) and the first circulator (C0), and  
connected to the adaptive optical filter (F) is a control unit  
25 (SE) for the purpose at least of switching through and  
exercising an influence on signal distortions in the optical  
signal (S).

23. Arrangement in accordance with Claim 22,

30 characterized in that

connected downstream from the bandpass filter (BPF0) is an  
amplifier (V1), or

an amplifier (V1) is arranged in the optical signal feedback  
(FB).

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24. Arrangement in accordance with Claim 23,  
characterized in that  
connected between the coupler (K0) and the first circulator  
(C0) is an amplifier (V0).

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25. Arrangement in accordance with one of the preceding Claims  
22 to 24,  
characterized in that  
a unit (EE) for the determination of one or more quality  
10 parameters is connected to the measurement unit (ME).

26. Arrangement in accordance with one of the preceding Claims  
18 to 25,  
characterized in that  
15 connected between the determination unit (EE) and the control  
unit (SE) is a bidirectional communication facility (KM).

27. Arrangement in accordance with one of the preceding Claims  
18 to 26,  
20 characterized in that  
connected to the determination unit (EE) is a module for  
analyzing and separating signal degradations.

28. Arrangement in accordance with one of the preceding Claims  
25 18 to 27,  
characterized in that  
connected upstream from the measurement unit (ME) is an opto-  
electrical converter (OEK).

29. Arrangement in accordance with one of the preceding Claims  
30 18 to 28,  
characterized in that  
the adaptive optical filter (F) has a module by which the  
phase and/or amplitude response of the optical signal can be  
35 influenced, and which is controlled by means of the control

unit (SE).